

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-22. (Cancelled).

23. (Original) A tilt sensor comprising:

a deflectable plate having piezoresistors formed on its surface;

a support member for supporting said deflectable plate at one end of said deflectable plate; and

a weight member arranged in a deflectable area of said deflectable plate, in which:

said piezoresistors have:

a first piezoresistor group including two pairs of piezoresistors arranged in the positions inside the deflectable area of said deflectable plate and symmetric with respect to a center line going through a middle point of width of said deflectable plate; and

a second piezoresistor group including two pairs of piezoresistors arranged in the positions inside the deflectable area of said deflectable plate, symmetric with respect to said center line and different from the positions of the piezoresistors in said first piezoresistor group, and constitute a first full bridge circuit with said first piezoresistor group and a second full bridge circuit with said second piezoresistor group, and further comprising:

a first tilt angle calculating means for calculating a tilt angle around the axis along the longitudinal direction of said deflectable plate based on the output of said first full bridge circuit; and

a second tilt angle calculating means for calculating a tilt angle around the axis along the lateral direction of said deflectable plate based on the output of said second full bridge circuit and the tilt angle calculated by said first tilt angle calculating means.

24. (Original) A tilt sensor comprising:

a deflectable plate having piezoresistors formed on its surface;

a support member for supporting said deflectable plate at one end of said deflectable plate; and

a weight member arranged in a deflectable area of said deflectable plate, in which:

said piezoresistors have:

a first piezoresistor group including two pairs of piezoresistors arranged in the positions inside the deflectable area of said deflectable plate and symmetric with respect to a center line going through a middle point of width of said deflectable plate; and

a second piezoresistor group including a plurality of piezoresistors arranged in the positions inside the deflectable area of said deflectable plate and on said center line, and

constitute a first full bridge circuit with said first piezoresistor group and a second half bridge circuit with said second piezoresistor group, and further comprising:

a first tilt angle calculating means for calculating a tilt angle around the axis along the longitudinal direction of said deflectable plate based on the output of said first full bridge circuit; and

a second tilt angle calculating means for calculating a tilt angle around the axis along the lateral direction of said deflectable plate based on the output of said second half bridge circuit and the tilt angle calculated by said first tilt angle calculating means.

25. (Previously presented) A tilt sensor comprising:

a deflectable plate having piezoresistors formed on its surface;

a support member for supporting said deflectable plate at one end of said deflectable plate; and

a weight member arranged in a deflectable area of said deflectable plate, in which:

said piezoresistors have a first piezoresistor group including two pairs of piezoresistors arranged in the positions inside the deflectable area of said deflectable plate and symmetric with respect to a center line going through a middle point of width of said deflectable plate, and

constitute a first full bridge circuit with said first piezoresistor group and a second full bridge circuit with said first piezoresistor group and different connection from said first full bridge circuit, and further comprising:

a first tilt angle calculating means for calculating a tilt angle around the axis along a longitudinal direction of said deflectable plate based on the output of said first full bridge circuit; and

a second tilt angle calculating means for calculating a tilt angle around the axis along the lateral direction of said deflectable plate based on the output of said second full bridge circuit and the tilt angle calculated by said first tilt angle calculating means.

26-28 (Cancelled).

29. (Currently amended) An azimuth sensor for detecting an azimuth, ~~characterized by~~ comprising:

the tilt sensor according to claim ~~1, 5, 6, 17, 18, 23, 24~~ or 25;

earth magnetism detecting means, at least biaxial, for detecting geomagnetic components in orthogonal directions; and

azimuth calculating means for calculating an azimuth based on tilt angle data obtained by the tilt sensor and geomagnetic data obtained by the earth magnetism detecting means.

30. (Original) A cellular phone comprising the azimuth sensor according to claim 29 built therein.